

Illustrated FOREST & OUTDOORS

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Montreal, Canada.



Photo: R. W. Harrington

*Map
Legend*

1. Mixed farming
2. Fruit farming
3. Fishing
4. Ship building

NEW HORIZONS IN Canada Unlimited

5. Coal
6. Gold
7. Gypsum
8. Pulp and paper

9. Lumber
10. Manufacturing
11. Steel
12. Iron



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Nova Scotia

GATEWAY TO CANADA...



Site of the first permanent settlement in

Canada, Nova Scotia today has a population of 600,000 people on its 21,068 square miles. Although best known for its fishing industry, its agricultural income is 50 million dollars a year, and the value of its manufactures doubles that figure. Canada's leading gypsum producer, Nova Scotia also supplies one-third of her coal from its Cape Breton mines.

Here, as throughout Canada, there are vast resources to challenge the industry and initiative of well-trained young Canadians. The meeting of that challenge can only result in rich rewards, and an increasing market for Canadian products and services. No country in the world today can match the opportunities offered by The New Horizons of Canada Unlimited.



O'Keefe's
BREWING COMPANY LIMITED



This soil was worthless for farm crops, and most neighbors doubted that it would produce trees. But a plantation of red pine was started in 1913, at St. Williams, Ontario.



The same area with ten years plantation growth. Average height: 11 feet. Note the changed appearance of the landscape with dense masses of evergreen foliage.

They Began With A Sand Dune

Suppose I plant-up an acre, or ten acres, of wasteland, what results may I expect?"

The urge to take over a piece of barrens and harness it to a useful job is stirring the minds of thousands of readers of 'Forest and Outdoors'.

Relatively few have watched the ascent of a pine or spruce plantation from its baby stage to full maturity. It is one of the most inspiring and satisfying of all human experiences. And as depicted in the accompanying series of pictures from Ontario's Forest Nursery Station at St. Williams, what may seem a tedious enterprise may be brought within a span of 32 years.

As to potential profit, it is worth noting that on an exact calculation, one of the single-acre plantations of the above age containing 900 red pine trees could be sold at this moment to return a net profit of \$700. An attractive dividend on a piece of worthless sand, with the added ingredients of sunshine, moisture, and the nutriment of Mother Earth.

By a test on a 32-year-old red pine plantation, 35 trees were felled and yielded 1054 feet of lumber (board measure). On the acre from which the 35 trees were taken, 1034 trees remain. If converted

into lumber they would provide 31,138 feet, board measure.

In another 14 years, with regular thinnings, there probably will be about 300 trees of pole size to the acre, averaging 60 feet in height, and 12 inches diameter. If sold as poles, at the very conservative price of \$4.00 they would have a sales value of \$1200 per acre, and a large and fast-growing stand of oncoming trees would still occupy the ground. It will be noted that in a close-planted woodland, the tendency of trees is to put on height at the expense of girth. In the case in question, this tendency answered the purpose of producing a valuable crop of poles for an always eager market.

Since, however, a great many makers of tree plantations are looking to the rewards of scenic embellishment rather than to a cash return, the developments at the St. Williams station, under the skilled direction of Mr. F. S. Newman, will amply answer the dual requirement. When one compares the sterility and emptiness of a sand dune or a rocky slope with a greenwood in all its restless vitality, the contrast should be sufficient to start a multitude of municipalities or individuals on a re-forestation mission.

After fifteen years. The trees have become about 21 feet high.



(See illustration next page)
What the old sand dune looked like in 1944.



Alberta's Watersheds to be Made Secure

AT LONG last, the problem — truly a national problem — of the restoration and management of the watershed forest areas of Alberta is on the way to solution. An agreement of far-reaching consequence has been reached between the Dominion and Alberta Governments.

For many years the Canadian Forestry Association has endeavoured to bring the question to a head, and has conducted educational programmes in Alberta to acquaint all classes of people with the importance of the East Slope watershed forests as the guardian of the rivers that maintain irrigation and water important sections of the lands of Saskatchewan and of northern Manitoba. Repeated itineraries of public addresses, a large volume of newspaper articles and editorials, and the preparation and distribution of brochures on the subject have played a useful role. It now seems probable that the entire field of 'resource management' will take on new vitality and that the Board, as recently announced, will constitute a rallying point of popular interest in Conservation.

The announcement of Hon. J. Allison Glen, Minister of Mines and Resources, in the House of Commons, contains the following details:

The proposed agreement provides for the establishment of a Board to plan, direct and supervise the construction, operation and maintenance of all

projects and facilities required for the proper protection and conservation of the area with a view to obtaining and maintaining the greatest possible flow of water from the Saskatchewan River and its tributaries. The Board will consist of three members, two, including the Chairman to be appointed by the Dominion and the other member to be appointed by the Province.

The Dominion agrees to make available to the Board a sum not exceeding \$6,300,000 during the first six years of the agreement for the capital expenditures required for the construction of forest improvements, the making of a forest inventory, for reforestation purposes and such other works and services as the Board may consider necessary. Further, the Dominion will provide for the yearly maintenance of a complete protective and forest management service and for research in silviculture and scientific services, an amount which with the Provincial contribution will enable the Board to spend annually a sum up to \$300,000.

The Province agrees to contribute annually towards the maintenance costs the sum of \$125,000 or fifty per cent of the maintenance costs if the amount thereof in any year should be less than \$250,000. The Province retains the revenue derived from the area provided that if it should exceed the amount of the Province's contribution then to the extent of the excess will the latter be increased. The Province also agrees to share equally in the cost of fighting any large or extraordinary fires. The Province will act as agent for the Board in carrying out the necessary works, subject to the conditions provided for in the agreement.

The term of the agreement is for a definite period of twenty-five years and will continue from year to year thereafter subject to termination by either party upon giving one year's notice.

THE PENALTY FALLS ON THE HUMAN FAMILY

Indiscriminate forest destruction has had a profoundly deleterious effect, not only upon man's living standards, but upon his very way of life. The entire area of the densely populated Upper Gauges Plain in India was once forested, but centuries of land clearing, overgrazing, burning, and erosion have wiped out all tree growth except for a narrow strip along the foot of the Himalayas. The accessible forests that remain are yielding under management 5 million cubic feet of timber and 50 million cubic feet of fuel per year. With a population of 50 million people, the per capita share is only one tenth of a cubic foot of timber and one cubic foot of fuel — the greater part of the population gets none at all. In the absence of other fuel, the rural population is forced to burn cattle dung and agricultural refuse which should go to maintain the fertility of the soil.

27 YEARS ON A SAND DUNE

See article on previous page. This magnificent stand of red pine was produced at St. Williams Forest Nursery, Ontario. Lower branches were pruned. The ground was pure sand, and the illustration shows what can be done to re-clothe any area of wasteland.



Only a few miles
from Ottawa is
Philippe Lake.
Photo: Malak.



You Can Create **GOOD FISHING** *Anywhere*

by *ALAN N. LONGSTAFF*

HUNTERS as well as fishermen, members of fish and game clubs in Quebec, Ontario and other Canadian provinces, who are interested in bird and animal hunting as well as trout fishing, believe that the stimulation of aquatic growth, through mineral fertilization of lakes, will increase both feeding and nesting areas for waterfowl and shore birds, and also provide more feed for moose. These animals frequent lake edges during the summer months, when they feed on lily pads and other marine growth.

Several clubs, with properties in Northern Quebec, are experimenting with this in mind.

However, the food situation in Canada and various European countries has a direct bearing on efforts to improve fishing in Canadian waters. This applies particularly to development of the technique of applying mineral fertilizer to waters containing trout and other game fish. The components of water fertilizer are the same as those used in land cultivation. Organizations such as Canadian Industries Ltd., which produce these fertilizers, must channel the major part of their present production toward agriculture, to supply more meat and foodstuffs for Canadian use and for export.

There is, however, sufficient material being released to permit many fish and game clubs and other interested organizations in Quebec, Ontario and elsewhere, to carry out experimental work. The results of these efforts, many of which were initiated in 1946, will be more evident in another year, as the fertility of lake bottoms accumulates from season to season.

Another interesting feature in lake management has cropped up, in connection with the use of rotenone, to destroy undesirable fish in trout lakes. This process was described in the January issue of *Canadian Forest and Outdoors*.

Derris root and cubé root, the toxic ingredients in rotenone, are imported from South America. The fly in the ointment is that the producers of these ingredients are holding shiploads of them off the United States and Canadian markets, in an attempt to secure higher prices for their products. It is not unlikely, however that Canadian scientists, who developed DDT for insect control, will find something to do the job hitherto performed by the imported products.

These and other interesting factors concerning lake management were outlined to an interested

group of Montreal sportsmen, members of the Red Pine Fish and Game Club, at their annual meeting, by Russell Snyder, of the Industrial Chemicals Division, Canadian Industries Limited.

While there is widespread interest in fertilization work carried on in Quebec waters in recent years, Mr. Snyder said it was not an entirely new process. The Chinese have fertilized waters as well as lands for generations. He had been visited by one Chinaman who wanted to buy the complete year's output of his company, for export to his homeland. He did not succeed.

While both fertilizing materials and rotenone components are in short supply, due to world conditions, there is sufficient being released to allow many clubs to deal with perhaps one or two of the lakes on their properties. With this in view, a special lake fertilizer has been developed. This is more concentrated than is the agricultural product, and it is available both in brick and bulk form. It is being sold in jute bags of 100-pound capacity, fitted with moisture-proof liners. The fertilizer should, however, be protected from exposure to wetting during shipment and especially so when stored at a fishing camp over the winter.

Where transportation costs are not a primary factor, the company suggests that 4-12-6 or 4-8-10 (4-12-8 in British Columbia and Alberta) can be used instead of the lake fertilizer, if applied at slightly more than double the rate. In the Oriskany Club work in Quebec the commercial type, 4-8-10 of potassium, calcium and phosphorus was used, on the basis of 20 1/2 pounds per acre foot, plus an equal quantity of limestone. As against 40 to 45 pounds of 4-12-6 per acre-foot of water, the rate of application of the special lake fertilizer is 20 pounds—50 per cent.

To determine the acre-foot basis of water being fertilized, it is only necessary to recall that a 20-

acre lake, averaging 6 feet in depth, would equal 120-acre-feet. The lake fertilizer costs \$75.00 per ton, plus transportation.

The waters of some lakes in the granite rock areas of northern Ontario and Quebec and the acid soil districts of the Maritime Provinces are medium acid in reaction and low in calcium carbonate. Experimental work in Quebec indicates that plankton, which provides fish food, prefer a good supply of lime. The lake fertilizer contains sufficient lime for nearly neutral waters, but in the low-lime districts, the application of lime as well as fertilizer is suggested. The cost of hydrated lime, where such is necessary, is around \$15.00 per ton, plus transportation.

Thus the club which plans to fertilize a lake of 20 acres in extent and 12 feet in average depth, will find the experiment cost about \$180.00, again plus transportation costs.

Fertilizer should be applied as soon as possible after the flood waters subside in the Spring; generally about the last week in May or the first week in June. One such application has been giving good results in the experimental work, but waters which are low in fertility and have considerable water entering them, will probably benefit from a second application about the middle of July.

The usual method of application, to date, entails broadcasting by shovel from a rowboat, the fertilizer being emptied from bags into a large box in the center of the boat. With one man rowing and another broadcasting, a 25-acre lake may be fertilized in one day. The manufacturers of the new high-analysis lake fertilizer suggest that this material be broadcast with a "Cyclone" seeder, sold by most seed-houses for broadcasting clover seed. Through the medium of a whirling disc, this machine, simply constructed and operated by hand, covers a distance of 15 feet on each side of the boat. Its capacity being somewhat limited, however, frequent refilling is necessary, so for larger bodies, a motor-driven spreader, similar to that used for spreading sand on streets, would be more efficient.

In lakes from 5 to 15 acres in extent and from 15 to 18 feet deep, the best procedure appears to be broadcasting the fertilizer all over the lake. In larger, deeper lakes, the greatest benefit seems to accrue from fertilizing only the moderately shallow areas — not over 15 feet in depth (See accompanying sketch.) And unless it is desirable to stimulate a vigorous growth of grass and weeds—for instance, to attract wild life to the lake—the shallow, grassy bays need not be fertilized.

SAN ANTONIO, TEXAS: Mammoth tree shears attached to a standard track-type tractor will cut trees up to 30 inches diameter of the soft wood varieties and hardwoods up to 24 inches diameter in a few seconds. The tractor driver may throw the tree in either direction by manipulating the tractor steering controls at the instant the tree is cut. He may also raise or lower the shears at will while the tractor is in motion, thereby cutting the tree either flush with the ground or leaving any height stump up to two feet. Jaw pressures up to 60 tons are obtained by means of the forward push of the tractor engine plus the tractor inertia on the shears. Only 37 inches of tractor travel is required to close shears. Floating shears suspended on cables prevent shock or strain on tractor when tree is cut.



HEARTS OF OAK

by Dan. McCowan

Illustrations from Photographs by the Author

IN a bygone age, when battleships were built of wood, the oak tree held pride of place in the forest. It was said that on retirement Admirals and Captains of the British Navy devoted most of their time to sauntering about their island home with pockets full of acorns. These seeds, poked into the ground with a walking stick and a fervent prayer, formed an important item in the preparedness programme so vital to the welfare of a sea-faring people. From small acorns great oaks were wistfully expected to grow and to furnish tough timber for staunch ships of the line. Although from time to time dark clouds hung heavy over the nation and often the outlook was grim, these doughty sailor men kept on planting acorns, confident that England was far from being "washed up" and that, some day, in the building of ships for commerce and for defence, their great grandsons would stand in need of what Shakespeare called the "Unwedgeable and Gnarled Oak".

In the framing of sturdy vessels the British shipwrights, handy with adze and auger, favoured the gnarled oak tree over those which grew tall and stately. Crooked trees, forming short turns and elbows yielded what the carpenters called knee timber. Here in Canada no fewer than eleven species of native oak trees are rooted but, with one exception, these would undoubtedly have been spurned by the old time craftsmen who laid the keels and braced the ribs of the dreadnoughts of that day. There is however on Vancouver Island a variety of white oak which would have gladdened their hearts. It is called Garry Oak in honour of Nicholas Garry an officer of the Hudson's Bay Company who came to Canada in a sailing ship and who gave his name to the once important Fort on Red River in Manitoba.

While a few Garry Oaks succeed in growing fairly straight trunks, most of them are, to say the least, contorted. They are all knees and elbows and double-jointed at that. Yet, living as I do in the Rockies, where every forest tree stands bolt upright, it is a distinct relief to occasionally visit a grove of Garry oaks in Victoria and study the architecture of trees which are really warped. The pronounced distortion is in measure due to the stony ground in which the individual sapling has struggled to set its roots. Where acorns have fallen and sprouted in good soil the resultant trees may in time yield logs from fifteen to twenty feet in length and from three to four feet in diameter. The wood has a nice grain but is said to be difficult to season properly.

The native Indians of Vancouver Island, living chiefly on fish, were occasionally dependent on forest products for food. At such times the emergency ration consisted largely of acorns which, if not as palatable as a salmon steak, were at least

(Continued on page 119)



Oak trees in winter.



Garry Oak at Victoria B.C.



Fruit and foliage of the oak.

Tomorrow Belongs to the Children

AS SPRING comes on, the Winter 'Chautauqua' of the Canadian Forestry Association in the schools of Western Canada continues to mount fresh thousands of teachers and students in attendance.

The city of Edmonton gave a ready welcome to Messrs Roberts and Pratt of the Association's staff who spent several weeks in the schools of that thriving centre, with daily talks and motion picture displays. Prior to Edmonton, 42,370 attended the meetings at Winnipeg, Regina, Moose Jaw, Saskatoon, and Prince Albert — 107 schools being visited, with 184 presentations. During the Winnipeg engagement, one-hundred hours of motion pictures were given on the screen, with twenty-five hours of Conservation talks.

Medicine Hat and Lethbridge were the next points after Edmonton, and later in April Major Roberts will commence his season's motor-truck

travels in Southern Alberta, working northerly in his Forest Conservation tour.



A crop-raising aid on prairie farm: Windbreak of trees to conserve moisture.



From a Principal of a large Winnipeg school: "600 pupils were much interested, and the lectures were very effective."

Another school principal: "Most educational, most timely, and a real impression was made."

A Superintendent of Schools says: "May I personally add my appreciation of this fine contribution to our educational work".

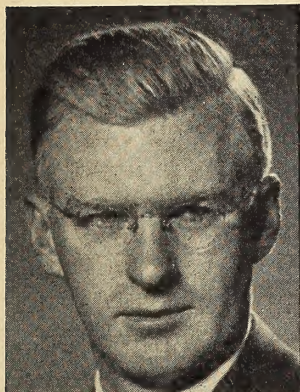




9000 miles - 90 days

Trans-World Flights Of

THE ARCTIC TERN



by
**JAS. L.
BAILLIE Jr.**

THE World's champion long-distance flyer, the graceful Arctic Tern, nests as far north as the limits of land and winters beyond the Antarctic Circle. It has a greater latitudinal range than any other animal with the possible exception of man himself, annually making the round-trip of 22,000 miles between its summer and its winter homes.

Arctic Terns, one of which is shown on its nest at Churchill, on Hudson's Bay, in the accompanying photograph, probably see more hours of daylight and sunlight than any other birds, enjoying 24 hours of daylight for at least eight months of every year.

Being pelagic birds which spend most of their life on the wing (like swallows, swifts and goat-suckers) their feet are but poorly developed. On the wing, however, they are the picture of grace, their long scissor-shaped tail and long, pointed wings, as well as their sharp bills and stream-lined bodies, being particularly adapted for a life of almost continual flight and diving.

Bird-banding will tell us the details surrounding their extended migrations. Already, it has shown us that individual Arctic Terns have not only



The Arctic Tern. Photo by W. Carrick



Young grosbeaks. Photo by D. Muir.

spanned 9,000 miles in the course of 90 days, but have pursued a route from Labrador to Natal, indicating that Canadian-reared terns in autumn cross the Atlantic and proceed southward, following the west coast of Africa, — certainly not the most direct route southward. — The Labrador bird,



Richardson's ground squirrel. Photo: W. H. Carrick.



Short-eared owl. Photo. H. M. Halliday.

a nestling when banded, had traversed strange oceans and unfamiliar shore-lines.

We are impressed by the accomplishments of man in spanning great oceans and equally great land expanses, aided by powerful machinery, compasses and charts, but here is a bird which for untold ages, has been pursuing its great journey twice annually, urged along by no fanfare and apparently guided solely by instinct.

* * *

One of the western farmer's most hated four-footed pests is the Richardson's Ground Squirrel, or "Flicker-tail", of the southern prairies of Alberta, Saskatchewan and Manitoba. It is equally ubiquitous in Montana, the Dakotas and along the western edge of Minnesota, and related forms occur in Idaho, Colorado, Wyoming, Nevada and Oregon.

Spending a great deal of their time standing bolt upright in the grass on the plains, they seek refuge in their burrows at the first sign of danger, with a final flick of their tail being their parting gesture as they disappear earthwards.

Grasses and the roots, leaves and seeds of many plants, and grasshoppers, make up the bulk of their food. They gather great quantities of seeds in their pouches and store these in their subterranean networks — rations to tide them over the early spring period after their long winter sleep.

But they are not condemned only for helping themselves to the farmer's crops. Their custom of being gregarious and digging honeycombs of burrows beneath the surface makes them a serious menace to cultivators and grazers alike, as well as to horses and cattle.

Poisoning, trapping and shooting have been extensively practiced by governments and by the western farmers to protect their stock, equipment and crops from the depredations of these squirrels and a bounty has been offered for their tails in

many places, but these campaigns have met with indifferent success.

Oddly enough, two of nature's best checks on the undue increase of these destructive rodents are the Swainson's and Ferruginous Rough-legged Hawks. That these useful birds have proved to be almost irresistible targets for the thoughtless gunner may be taken not only as a fact but as a reflection on the intelligence of the gunner.

* * *

An interesting example of the tie-up between certain birds of prey and certain rodents comes from Toronto. An influx of Short-eared Owls onto a golf course and surrounding fields on the northern outskirts of the city coincided with a plague of Meadow Mice. Examination of 1330 ejected owl pellets (picked up under the owls' roost in the ornamental evergreens on the golf course) revealed that the owls (up to 18 in number) had lived to a large extent during two successive winters on the pestiferous Meadow Mice.

Some hawks and owls may make the occasional foray into our poultry yard, but the good birds of this type do in keeping down the numbers of ground-squirrels, mice and other rodents, far outweighs any harm they might do to man's material interests.

* * *

How the availability of some particular item of food can even effect the distribution of an animal has been shown in the case of the Evening Grosbeak, one of the most handsome of all Canadian finches.

Formerly found in Canada in summer exclusively in the west, this bird ranged in winter across north-eastern North America irregularly, returning in spring to their far western breeding grounds. In the east, they came to feed to a large extent on the winged seeds of the Manitoba maple, *Acer negundo*, which remained hanging on the trees all winter. With the extensive planting of this quick-growing but untidy tree in the east, the winter visits of the Evening Grosbeaks became more and more regular and commencing about 25 years ago they began to take up housekeeping in the Lake of the Woods region of Ontario. Since then, by progressive stages, it has extended its summer range eastward, until it now nests regularly in a rather narrow belt extending right to the Atlantic coast.

In many parts of Ontario — Muskoka, Parry Sound, Algonquin Park and elsewhere across to the Manitoba boundary — it is now a common sight to see them accompanied by their young throughout the latter part of the summer, where two decades ago they were unknown except as winter stragglers.

Nests have been found near Lake Nipigon, near North Bay, in Haliburton County and in Algonquin Park — where the accompanying photograph was made last summer — and there is every reason to suppose that they are increasing and spreading as breeding birds in the east.

Naturalists bow to the lowly *Acer negundo* for its contribution towards facilitating the eastward extension of these handsome birds, and wish them well in their occupation of new territory.

Our Flight to the Land of

by
VERNON E. JOHNSON

MYRIAD GEESE

GEESE! — Geese! Shouts among the passengers rang out in the Norseman V as we circled Ruperts House. A flock of 300 to 400 birds had risen across the river, frightened by the throb of the airplane motor.

This is what we had come to see, but these few hundred dwindled to nothing by comparison to the flocks at the battures and meadows of Ruperts Bay. So far everything had been exciting and interesting. So this is Canada — we had flown about 500 miles north of the Laurentians to get pictures of the great flocks of geese and shore birds and to shoot a few as hunters will.

Before the war, Tom Wheeler of Gray Rocks Inn had asked me to go to James Bay to hunt geese, but the war made it impossible to spare the time or to get the gas — to say nothing of a suitable plane for such a trip.

V-E Day and V-J Day came, and with them civilian production has started at Noorduyt, permitting the delivery of one Norseman Mark V in late August. As the plane had been built for bush work: carrying forest protection equipment, canoes and hunting parties, it was ideally suited for a trip to the north country.

As the season advanced, arrangements were made with Mr. Michell, the Factor at Ruperts House, to take care of us. We, of course, had no idea of what to expect — what the country would look like, of what equipment to take and what to get at Ruperts House.

It was finally decided to leave St. Jovite on September 25th late in the afternoon, and stop over somewhere to break the trip. Members of the party were to be Tom Wheeler — Gray Rocks Inn; Ronnie Jacques, the Montreal Standard photographer; W. J. Williamson — Ottawa; K. A. Barwick and Vernon E. Johnson, Hampstead. The plane was piloted by Charley Forbell and serviced by air engineer Phil Lariviere.

Arrangements were made as to who would take mess kits, tents, and food; while each one took his own sleeping bag and clothes. An important item proved to be hip rubber boots — they were essential once we reached the marshes.

On September 25th the weather was bad, but the weatherman insisted it was going to clear. Anyway we did not get away on that date. Fortunately the 26th was clear and mild, but a backlog of flying had to be caught up before our party could get away. Other hunters and fishermen — either guests at Gray Rocks or at Joe Ryan's at Tremblant wanted to be taken in or brought out. There were also a bunch of woodsmen who had to be moved in from Lake Nominigou to Lake Reveillon (Rossignol). At 5 p.m. the plane was in, ready to gas and load up with our duffle. At 6 p.m. we were away and decided to spend the night at the Gati-



Ready to leave Ruperts House on the home journey: Messrs Williamson, Barwick, Wheeler and Johnson.

Vernon Johnson gets his first one.)





A great day's shoot: Messrs. Johnson and Wheeler in action.

neau Boom Co. Depot on Lake Baskatong.

Morning broke clear, but with no breeze, which resulted in fog on the lake. We were fidgeting to get away and finally took to the air at 8:20 heading for Senneterre. On the lake we saw the huge rafts of pulpwood, and sawlogs being moved to the dam — for delivery to the pulp, paper and sawmills down at Gatineau, Hawkesbury and Calumet. On from Baskatong we passed over one of the huge water reservoirs for Gatineau power plants, then, up river to Cabonga — another vast expanse of water storage with hundreds of islands and seemingly thousands of miles of shore line. Pulpwood and logs were also being moved down river below this water storage.

As we crossed the Ottawa River we saw a magnificent bull moose standing in the river shaking his horns which glistened in the morning sunlight. Later we saw a couple of smaller ones.

There was a hunting camp on every lake from St. Jovite to Cabonga; certainly there were many tents set up and lots of canoes roving around the lakes and streams. With all of these hunters, many

Transferring the baggage from plane to boat at Ruperts House preparatory to setting out for Cabbage Willows.



of whom are successful, it seems impossible that the moose could last much longer.

One of the reasons why late September is such a pleasant time of year to hunt or fish in the Laurentians is the beauty of the forested hills. The hardwoods are aflame with color; the maples a beautiful red and the birch and poplars carry a less showy yellow. These with the evergreens create a showy country side which no artist can really paint.

At Senneterre we stopped to gas up, and while there saw several moose hunters from the States, all anxiously awaiting aircraft travel to their favorite spot. Much delay had been caused by a crash when a Gypsy Moth, in landing, collided with a Fairchild 71 while it was taxiing out for take-off. Replacement planes are impossible to find, but travellers are raring to go hunting and prospecting. On our return several days later we met a party from Williamsport, Pa. who had been there waiting several days to be taken in.

After re-fuelling we were again on our way — 226 miles to Ruperts House, and with a strong south wind we plowed along pretty fast. North of Senneterre there are vast areas of black spruce, mostly of pulpwood size, but as we went north we saw more and more barrens.

As the picture unfolds and we neared and then reached our final hunting grounds, it became evident that here was a paradise for shorebirds — followed by all the killers who relish the taste of goose. Literally square miles of marsh were covered with blue geese, a few white waveys and an occasional Canada goose. Countless numbers of ducks — pintails, blacks and green winged teal seemed to dominate, though we were assured that mallards, redhead, canvasback and bluebills came later in the season.

Our course took us down the Bell and the Notaway Rivers, then as they swing west, we kept on north across the Broadback River to Ruperts River, and there beneath us lay the white buildings of the Hudson Bay Post, where we arrived at 12:10 p.m. Our search was for geese, and we saw hundreds of them across the river as we landed on the river in front of the Post.

(Continued on page 120)

HUNGER RISES!—THE GOOD EARTH WEAKENS!

by WILLIAM VOGT,

Chief of Conservation Section, Pan American Union

(An excerpt from "Hunger at the Peace Table")

CHINA is alleged to have lost the good earth so completely from 25 percent of its land that not even weeds will grow there. And China, it should be remembered, with one of the severest population pressures anywhere in the world, has proved itself — within the limits of its industrial resources — one of the greatest fighting nations of all time.

Two of the areas most ravaged by soil erosion anywhere are Australia and South Africa. Great Britain with only about 6 per cent of its population engaged in agriculture in 1941, has existed — so far as food and fiber are concerned — as a parasite on these Dominions and a few other countries, notably the Argentine. Unable to support her own population on her own land, she has drawn on eroding fields all over the world. And yet Great Britain and her Empire are among the most advanced nations of the earth.

What of our own hemisphere? Mexico has gone quite a way in taking great estates from the few and distributing them among the many. Mexico, with less than 12 per cent of its land arable, is suffering from worse soil erosion than any other nation in the hemisphere. As one flies over Mexico, it seems that either the vast majority of the fields are gullied by erosion or are perched between gullies that are surely consuming them.

All the way down to Southern Chile one finds comparable conditions; the red soil of Llanquihue is washing, like the red soil of Oklahoma. This is, geologically speaking, a young continent. It is highly erodable. Many cornfields are in areas where only trees, browse or grass should be permitted to grow.

Peru once, under the benevolent dictatorship of the Incas, grew wheat on the flanks of the Andes. It developed a system of stone-faced terraces, some



Can the declining soils and forests of the Earth support the rising millions of population? A scene in Jungagad State, India.

of which have lasted to the present day. But, according to Doctor Bennett, such terracing would now cost about \$18,000 an acre. At this rate, Peru could scarcely compete in the open market with Australia and the Argentine. So the terraces are crumbling.

Ecuador, with a population of Indians who are among the most engaging people of the world, but with a very high illiteracy rate, has lost great expanses of its land, and is rapidly losing more. Seen from the air, it looks as though it suffered from some horrible skin disease.

Columbia, one of the most progressive countries in Latin America, is in an equally bad situation. From the department of Antioquia, the people of which often call themselves "the Yankees of South America," the farmers are already moving out, having "gone through" their farms. Antioquia has high hope of making itself an industrial center. Yet when, in the rainy season, one turns on the faucet in the hotels of Antioquia's Medellin, the good earth runs out with the water.

Water supplies are an increasingly serious problem, with stepped-up industrialization, in many countries besides the United States. One of the three largest American corporations considered establishing branch factories in Mexico City, and decided against it because of lack of water. Many cities in that country have had to ration their water during the past few months. In some, the supply has been available only a few hours a day. Yet, even national parks — established in part to protect watersheds — are being lumbered over, and throughout much of the republic forest replacement is sixty to a hundred years behind cutting.

Burning, goats and sheep have made it impossible for young trees even to get started. This, of course, has speeded up over-grazing, soil erosion rate of run-off of rain water — the same cycle.

Guatemalans grow corn and wheat on hillsides so precipitate that a fall might well result in a broken neck for their farmers. Entire mountainsides where the angle of repose has been altered by deforestation have collapsed into river valleys. The great ancient Guatemalan civilization of the Mayas is thought to have been wiped out by soil erosion and exhaustion; their modern descendants are plodding down the same road.

The grim catalogue could be extended to include virtually every country in the Western Hemisphere, Southern and Eastern Europe, most of civilized Asia and Africa, and, as has been said, Australia. The earth is constantly cutting its dividends.

At the same time, demands for the fruits of the earth are increasing. Except for countries overwhelmed by war, where the trend has been temporarily reversed, populations are mounting nearly everywhere. Mexico, ravaged by deforestation and floods, soil erosion and hunger that walks in its steps, has grown more than 30 per cent in the last fifteen years. This is probably extreme — in general, reliable statistics are not available — but it illustrates the trend. Tragic China is outbreeding the enormous losses caused by war and, according to Dr. Warren S. Thompson, "may well grow at the rate of 10 to 15 per cent in a decade for several decades." Even India, land of malaria, cholera, plague and starvation, increased by 50,000,000, or 15 per cent, between 1931 and 1941.

By the placid waters of Cameron Lake, Vancouver Island.

Photo: Steffens-Colmer.



Britain's Favourite Tree: CANADA'S SITKA

THERE is no question that the "fightin'est wood ever" during the recent war was the Sitka spruce. This native of the Pacific coast region from Alaska to Northern California, transformed into Mosquitoes and other planes with a sting in their tail, played a greater part in the drive for victory than any other species.

The beauty and charm of the Sitka spruce is indisputable. Indeed, it might be fittingly described as "The Duchess" among the aristocratic members of the tree family, and it is appropriate then, that the tree should be coming increasingly better known in Britain.

It is an interesting fact that the tallest tree in Ireland is a Sitka spruce. This splendid tree grows on the estate of that keen forester, Lord Powerscourt, near Dublin. When measured about two years back it had a height of 169 feet (so that at this moment is undoubtedly tops 170 feet), and had a girth of 16 feet 7½ inches. By the courtesy of Lord Powerscourt the writer was able to obtain the accompanying illustration of the tree.

The virtues of the timber of the Sitka spruce for plane construction were by no means a discovery of the last war. They were revealed away back in 1917 during the First World War. Being uniform, light, and easy to machine it was in very great demand. So large, in fact, was the call for it for fuselage construction that substitutes had to be found. Short spars formed by glueing laminations together in the form of hollow tubes were largely used towards the second half of the war.

"The British Standard Nomenclature of Timber for Aircraft Purposes" published by the British Standards Institution, said of Sitka spruce, "the best known timber for spars, struts, and other parts. The best of all spruce as regards grade of wood obtainable."

Since during the past 40 years many millions of Sitka spruce have been planted in the British Islands the tree is becoming comparatively well-known. The Forestry Department of the South-Eastern Agricultural College, Wye, in response to a query gave the following answer:

"This tree has been imported in large quantities from the ports of British Columbia and the United States of America. Its strength, stiffness, lightness, and elasticity made the most suitable wood for aeroplane construction, and during the war it was largely used for this purpose. This timber is like white deal, without colour, and is most useful on estates.

"A cool, moist loam suits it best, if not too light and dry, but in general it is catholic in taste, though it does not like gravelly soils. It thrives in all parts of the British Isles and is vigorous in growth. It should be used in wettish places and at high elevations in the heather moorland.

"Its seedlings are slow in growth during the first two years and are frost tender. The seedlings should be transplanted at the beginning of the third year, and planted out in the permanent position at the end of the third or fourth year. In



A Sitka Spruce in Ireland, 169 feet high, girth over 16 feet. On Lord Powerscourt's estate near Dublin.

low-lying situations it is liable to frost, and plants as large as three to four feet should be used. After it is once established it gives no further trouble, and cleans its stem quicker than the common spruce. If the tree is grown for commercial purposes it should be planted close and kept so, in order to ensure narrow-ringed timber free from knots."

Excellent results have been obtained in extremely bleak and exposed places in Scotland, results, indeed, which have astonished some of the leading experts in forestry in Britain. The trees are planted from three to four feet apart and never less than two feet high. Young trees of smaller size would require to be constantly weeded, or they would be killed by the rank grass and weeds which stifle small trees in many parts of Scotland.

Once planted, trees of two to three feet high can take care of themselves, and if planted close enough are never wind shaken; and it is far less expensive to thin out young trees than to keep on weeding them until they are high enough to outgrow the weeds. By the means outlined it has been found possible to grow fine plantations on the barren lands of Caithness where ordinary methods have proved hopeless, or so expensive that their costs were found prohibitive.

MAKING SURE OF THE FUR HARVEST

Saskatchewan Introduces New Projects To Protect Fur Bearers And Fur Trappers

by Phil Shackleton

UNDER a new plan for the conservation of beaver and muskrat, staple fur bearers in Saskatchewan, the government of that province has placed the trapping of these animals on a quota basis. Since the first Great War, both muskrat and beaver have become increasingly scarce and there are many parts even in the northern part of the province where they are no longer found.

Formerly, the only conservation measure afforded was the regulation of open and closed trapping seasons. During open seasons, however, trappers in the past took every animal available, leaving few to breed a new population. Such practices have necessitated at times the cancelling of open seasons in the hope that the remaining animals would restock the areas sufficiently to allow further trapping. This inefficient regulation also brought slim seasons to many Saskatchewan trappers.

Today, new conservation measures are being introduced throughout the province. After study of the Mayberry Plan in Manitoba, a similar program was put into effect in the southern settled part of Saskatchewan. Individuals, usually owners or occupants, are given exclusive rights to trap on certain lands. Quotas of muskrat to be taken are established by house counts and on an estimate of five rats to the house. A trapper can take three rats per house, leaving two for propagation.

North of Prince Albert, crown lands have been divided into 65 conservation blocs. Officers of the resources department have helped trappers in each of these areas to organize and elect councils which will act as self-governing units pertaining to trapping affairs in every bloc. Resident trappers in each bloc are given exclusive trapping rights. This factor is helping to prevent wholesale poaching, predominant in former years.

Under this plan, trappers will continue to operate their own trap lines for other fur-bearing ani-

mals, but the trapping of beaver and muskrat will be done on a community basis. Beaver lodges are counted and permits issued to take one beaver from each lodge. After an estimate of the muskrat population, the number to be trapped can be established. Of muskrats, 40 per cent must be left for propagation.

Dominion and provincial governments are co-operating in this latter plan, agreeing to spend together \$50,000 annually for 10 years. Because the northern population is largely Indian, Ottawa will contribute 60 per cent of the cost. The money is used to set up conservation areas, transplant live beaver into trapped out areas, pay salaried personnel, build dams and purchase other equipment.

In the southern part of the province surveys have been made, dams have been built and wild rice to feed muskrat planted in marshes. In cooperation with Ducks Unlimited, the government this summer will flood several hundred acres near Cumberland House as a breeding ground for muskrats and water fowl. In addition, live beaver have been transplanted to areas where water levels need raising and trappers are being encouraged to live-trap beaver so that young and females may be released unhurt. Plans to survey and develop further areas for the benefit of trappers are being continued jointly by federal and provincial governments.

Beware of Quicksand

by L. E. EUBANKS

FORTUNATELY real quicksand is not found in many places. Occasionally it occurs along the seashore, but more frequently it is usually found far from the mountains themselves. Real quicksand is a bed or sandbar of tiny flakes of mica.

Mica we know as isinglass, which has many uses in the commercial world — most familiar to many people, probably, is the small windows of heating stoves. It is a mineral crystal, and is found associated with other rocks, especially granite and feldspar. One can observe the minute particles of mica glittering in granite, and it has at times been called "fools' gold", because its deceptive glitter is often mistaken by the "tenderfoot".

This strange stuff is found in blocks, composed of very thin sheets like the leaves of a book. When these sheets are broken up by the weather's action, the mica keeps on breaking and splitting until the flakes are microscope in size; but each one remains flat and smooth, with its inherent sliding quality.

When a bed of these infinitesimal flakes is cast up by a stream through the combined forces of water and gravitation, then you have the most dangerous quagmire in the world, because it has no supporting surface, nothing but flat, slippery slithering flakes. It has no stability of its own, yet when one steps into it, and begins to sink, it closes around one like a vise. And the harder the victim struggles the deeper and faster he sinks. Floundering is fatal; the only chance is to get out with a slow, steady pull — and, nearly always that requires help.

Setting a trap in a muskrat house. The black mounds in marshy background are other rat houses.



Spring Comes To Algonquin Park

by Lyn Harrington

Photographs by Richard Harrington

“WHEN the hounds of spring are on winter's traces” in Algonquin Park, it is a time of magic, a magic known only to the few residents who remain to watch the march of the seasons. Rangers and linemen, a few hardy cottages, a handful of lumbermen and a sprinkling of villagers greet the lengthening days, the warning sun of March and April.

Algonquin Park, more than two thousand square miles of wilderness patterned with lakes and streams, lies at the nipped-in waist of the Province of Ontario, just south and east of North Bay. Hardwood forests crown the hills, interspersed with the black of evergreens. Highway and railway lead in to the southern borders of the Park, and the north is flanked by a railway line. Overhead the hum of planes may be heard daily, but the centre of the Park is a vast loneliness. Only the scalloped trail of the ranger on patrol, and the tracks of the animals he protects break the snowy expanses.

Protected deer in Algonquin Park.



Spring breaks upon a ranger cabin at Lake La Vieille, Algonquin Park.



Days and nights of varying temperatures are the lot of the observer who sees the grip of winter loosening on the wilderness park. A warm sun beats down during the days, only to be succeeded by a cold spell, which sets the trees to snapping. Blizzard is followed by soft snow, that melts almost as it falls. The drifts become moisture-laden, and dark water wells up into every footstep.

On a sunny crisp day, we flew over Algonquin Park. Below us the shadows of the trees were violet at the edges of the frozen lakes. A snowy groove through the fields of swamps indicated a stream, now buried beneath the mantle of winter. The groves of hardwood looked like brown scrim laid over mounds of white.

On snowshoes we prowled through the park, over unbroken trails to watch residents fishing through the ice. Alongside gurgled open water of the turbulent creeks, embroidered with the tracks of wild creatures. Out along the logging-road where the rangers were cutting down dead trees, “dozey” at the heart, for firewood. Or off across the frozen lakes to watch the winter harvest of huge ice-cubes, ice that would preserve next summer's fishing trophies.

From Radiant to Lake LaVieille we snowshoed through the woods, floundering at times in snow up to our waists, dragging a toboggan behind us. Blue, and sometimes green, shadows lay under the trees, proving that Canadian artists do not overstate the case in depicting the beauty of the winter woods. The snow was soft and feathery, and breaking trail was no easy matter. In spite of the cold, we found ourselves showing back parkas, stripping off mittens, and unzipping jackets.

Crossing a marshy lake, we came upon a large beaver lodge. Never a track marred the snow around it. But the beaver were there. At the top of the mound, the snow was melted from the warmth of breath and bodies below. Nothing short of dynamite could have disturbed that fort of frozen mud and sticks.

A ranger's cabin at Lake LaVieille gave us opportunity to study the creatures of the wild. Deer would bound across the lake nearby so frequently as to excite only casual interest. Tracks of rabbit, of mink, weasel and marten, of fox and wolf appeared in the snow.

One day we came upon two otters, fishing for their lunch. As one curved down into the black hole in the ice with all the grace of a cat, the other appeared, a fish in its jaws. It hunched there on the ice, and ate, holding the fish in its paws. Then the second one curved up out of the hole with its trophy, and began eating.

They did not see us watching them from the screen of the forest. When we moved out onto the ice, both disappeared. One, however, was rather curious. He reappeared in several holes further down the stream, watched us with annoyance, even to hissing our performance. Then he'd make his

way over the top of the snow in great sliding lunges, that left his characteristic trail behind him.

Crossing the wide expanse of Lake La Vieille to Dickson Lake, we saw a pack of wolves playing on the ice as if they were five puppies. Not a single blood-chilling howl, not one baleful glance of slit green eyes, not a moment of being treed by a hungry pack, nor of headlong pursuit! Alas for wolf stories of legend, the wolves took no notice of us for a time, then vanished around a rock as we came up with them. Unlike good children, they prefer to be heard, not seen!

At Dickson Lake, the ranger's cabin and a beaver lodge practically faced each other across a swift stream. We were in a choice position to observe the hardy animals taking their daily dip. They were cautious enough in the daytime, but bold enough when night fell. They cut down a ten-inch yellow birch within a few feet of the cabin on the portage trail one night, leaving a circle of gold and orange chips.

A warm sunny day, when the snow was soft and sticky in the little bay at the foot of the rapid, we saw a beaver swimming round and round, making sure everything was safe on shore. It was a male beaver, for he swam with his head held high. Keeping an eye out for danger, he didn't notice what was directly ahead of him. Crash! he steered headlong into the edge of the ice. In his following tours of the pool, he never got caught in that way again.

He considered us to be a menace, for he smacked his tail with a warning thump, and disappeared. He re-appeared a moment later to see if those two strange stumps on shore had moved. We hadn't. Re-assured he ventured out on a log, holding a limb in his paws — a light lunch.

There were soft crashes as snow broke loose from the drifts and fell into the pond. Above the rapids, a soft wind lifted the ice, and every now and then, a pan of ice would break off. The soft wind honeycombed the snow, so that it became saturated with moisture. We watched the height of the snow, and could almost see it sinking each day. Long circles grew from the eaves almost to the ground. The stream grew more tumultuous day by day.

And the birds heralded the coming spring. Chickadees swung and played in the trees like sweet-voiced acrobats. Their songs held an excitement and tender notes that had not been there throughout the months of deep winter. Bluejays called with a liquid note far removed from their familiar raucous yell. Woodpeckers lashed at the trees in a frenzy of energy, tearing off chunks of bark.

The surface of Dickson Lake was soft and slushy when the plane came down in great circles. Soon we were flying above the clouds in serene golden sunlight.

In the space of ten days, spring had come with seven-league boots to the hills of Algonquin Park. The trees carried the tinge of colour up into their topmost twigs, a reddish haze in the maples and elms, champagne colour in the willows, and wine-red in the osiers beside the streams. The tree-tops

were plummy, resembling an old-fashioned feather duster.

Spring called across the fields of snow in the voices of a hundred babbling streams that had shaken off their winter garb, and twisted through the swamps and forests like unravelled black yarn. Spring was repeating her ageless magic, hounding winter out of the wilderness park.

CASH-for a New Word To Clarify 'CONSERVATION'

Readers of 'Forest and Outdoors' are invited to employ their ingenuity in devising a new word, or perhaps two words, to give greater precision to the term 'Forest Conservation'.

In a multitude of minds, the term 'Conservation' as used particularly in reference to forests or wildlife suggests a conflict with utilization. To conserve an area of woodlands means to many a walling-off from practical use, or the creation of a tree-growing sanctuary. The true meaning, of course, is that the regenerative capacity of the woodland should be assured and developed, and rational utilization should be the ultimate aim.

The search for a new word, presumably, will necessitate the invention of a brand new term. It should, however, suggest the meaning of 'resource management', and have easy pronunciation.

A prize of ten dollars will be awarded by 'Forest and Outdoors' to the writer of an acceptable term. Address: 1018 Canada Cement Building, Montreal.

SCARCITY AMIDST PLENTY

Even in countries where great timber reserves exist there are local wood scarcities due to many factors, chief of which are inadequate transportation and lack of labor. Peru, with a forest area of more than half its land surface, imports annually 5 million board feet more than it exports. Venezuela, with the tremendous forest wealth of the Orinoco Valley at her very doorstep, continues to import large quantities of wood from the United States and Canada.



Home beautification through tree planting becomes common practice on the prairies.

FOREST COMMUNICATIONS TO SPEED

FIRE SUPPRESSION

A FAMOUS army general once said that the way to win a battle is "to get there the fustest with the mostest". This tenet aptly applies to the suppression of forest fires.

Complete lack of adequate means of relaying fire warnings to suppression units was of utmost concern to forest protection authorities in Ontario during earlier years of organization, and, in their extremity, many experiments were carried out. Little is heard concerning the Heliograph today, but exhaustive tests were made of this instrument on the Mattagami Pulp and Paper Company's limits in 1916.

Sunshine was found non-essential to the operation of the Heliograph. Said a writer, describing the experiments, "Even in heavy haze, the flashes penetrated a distance of ten miles or more".

Further experiments included flash-lamps "which worked very well at short distances". In conclusion, the writer stated that "the use of the Heliograph will be assisted by telephone lines run through the bush along main roads, and telephone extensions will keep pace with woods operations. Rangers on canoe patrol will likely be supplied with Heliographs next season".

The unnamed writer was more prophetic than he knew, for, though the Heliograph never was used extensively, the first bush telephone lines were introduced only two years later, in 1918. So successful did they prove that many more were installed as the Department of Lands and Forests extended its forest protection coverage northward and westward in Ontario.

Increased use of the telephone, however, revealed limitations, and other more effective means of rapid communications were sought, particularly as the use of aircraft as important detection media became an accomplished fact. Investigators, therefore, began to look on Radio, then in a stage of rapid development, for the answer.

The first radio tests were made in 1924, the year in which the Provincial Air Service was inaugurated, in the then Hudson Inspectorate. They proved so successful that, in 1927, following a period required to build and somewhat perfect the equipment, four permanent radio ground stations were erected: at Red Lake, Sioux Lookout, Swaine's Lake and Goldpines.

From 1927 on, expansion and interest in the new venture grew to the extent that mining and other people in the neighboring territories began to make use of the Department's radio systems. Traffic became so great that, in 1928, a toll had to be established on other than Department messages. So began the Department's now extensive radio and telephone communications systems.

In 1928, two more ground stations were opened, one at Timagami and the other at Maple Mountain, and by 1935 the service had grown to 34 stations. In that year, the Department began experiments with 2-way Ultra High Frequency units for Look-out Towers. Results were again so satisfactory that, in the fall of 1935, the Department built 12 new units for use in 1936, and followed this achievement with 23 more for 1937 installation.

It is of notable interest that these early experiments and constructions of radio communications units were carried out by Department of Lands and Forests personnel. In fact, 85 per cent of all equipment in use today has been designed and made by Department technicians, the remaining 15 per cent comprising units installed in aeroplanes at purchase. Small wonder that the Radio Branch of the Division of Forest Protection has become one of the Department's important sections, especially in view of its relationship to the prime factor in suppressing forest fires: speed of detection and notification.

The 2-way UHF tower units are compact: 14 inches long, 10 inches wide and 10 inches deep. The wave band is set at 55.8 megacycles, the signal being broadcast on "line of sight" path from an eight foot, single rod, antenna. The receiving section is powered by dry batteries and the transmitter with wet-cells which are recharged periodically by means of a generator powered by a $\frac{3}{4}$ hp gas engine.

By 1946, the Department had 40 ground radio stations in operation, plus 20 medium-wave aircraft transceivers capable of aircraft to aircraft or aircraft to ground inter-communication. By 1946, too, a total of 202 tower radio sets had been installed.

Ontario forest rangers receive instruction in telephone communication systems maintenance. Ontario Forest Ranger School, Dorset.



Telephone systems remain the faithful servants of the forest protection service in more populated sections. Ground lines, never completely satisfactory, are gradually being replaced by hand-drawn copper lines. The difficulty experienced in obtaining copper wire has always been the greatest handicap in developing the Department's telephone systems. Another handicap cropped up, too, from time to time: the proximity of communications facilities prompted many people nearby to use Department lines.

Department telephone systems have never entered into competition with private systems. In fact, when any Department system has become overloaded, attempts have invariably been made to have a private system take over, the Department, of course, reserving priorities during outbreaks of fire. Department telephone lines at date total almost exactly 3,000 miles.

In north-western Ontario Districts, radio transceivers are more widely used than telephones in linking towers and Ranger Headquarters, but from Kapuskasing south to North Bay and east to Pete-

wawa, combinations of radio and telephone systems obtain. South of North Bay, the systems are almost entirely telephone. As part of their training at the Ranger School, Forest Rangers receive instruction in the construction, use and maintenance of telephones and lines.

Tower radios are simple and may be operated by casual staff (towermen) with a minimum of experience, but ground radio transmitter-receivers require experienced licensed operators holding 2nd class certificates or better. The radio technical staff of the Department at date numbers 18. Either radio or telephone technicians, in some cases both, are stationed in each District as conditions warrant.

When an aircraft transceiver breaks down, the pilot immediately takes out the entire unit and ships it to the Sault Ste. Marie Air Base, at the same time telegraphing for a new unit which he installs complete. The defective unit is repaired at the "Soo" and held ready for the next "trade". This system of servicing aircraft keeps the planes in the air, so that forest fire detection in remote regions may be carried on without interruption.

Packboard Stretcher For Emergencies

by PAUL W. H. G. JOHNSON

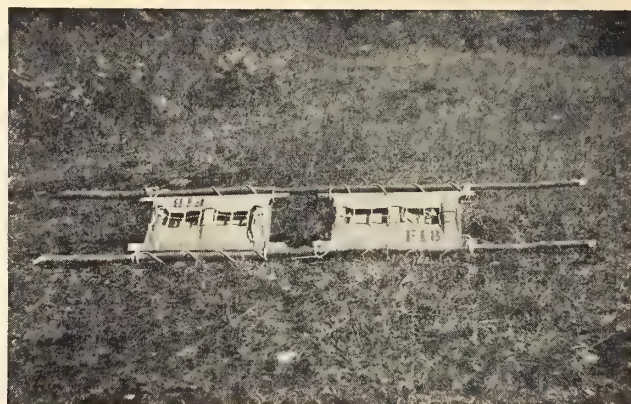
WHEN camping, if you know that you are prepared for any emergency, your confidence will enable you to fully enjoy your trip. It is not pleasant to think that some member of the party may become seriously injured, but these things do happen occasionally and permanent injury may be done if the patient is not carried on a comfortable stretcher.

If a camping party consists of three or more members and if there are two packboards in use, an efficient stretcher can be quickly made in the illustrated manner.

First cut two strong, straight, light poles for handles. Then place two packboards on them so that the packstraps are upper-most and the lower end of each board is towards the center. The boards should be left a few inches apart in the middle to give the required length. This will also make the stretcher more comfortable, because the patient's seat will protrude through the opening and his back will not tire so easily while he is being carried.

Secure the packboards to the pole handles by binding them on with the packboard rope. If the rope is passed in a spiral around the poles and through each eyelet, it will hold the boards firmly in place.

Wrap the patient in a blanket and make one blanket into a pillow. With all injuries the patient will recover more speedily if his body resistance has not been lowered by exposure. Place the patient on the stretcher and cross the two packstraps over the legs and buckle them on opposite sides. The other two packstraps at the head end of the stretcher should be worn by the patient in the usual manner. This will comfortably secure the patient to the stretcher and facilitate the work of carrying.



Under side of packboard.

If there is only one packboard in the party and member sustains a simple leg injury, such as a twisted knee or sprained ankle, you can lash the packboard to poles in the same manner as for a stretcher, and make a comfortable sedan-chair. With one of these chairs you can easily carry the injured person to safety.

When carrying a stretcher, the bearers should walk out of step. This will prevent unnecessary jarring of the patient and is easier on the arms of the bearers.

It is hoped that you will never have to construct one of these stretchers, but it is wise to know how to do so in case of accident.

DENMARK'S GREAT YIELDS

Because of differences in management, forests vary widely in their yields per acre. Compared with an average per acre yield of 30 cubic feet in the United States, the annual growth in Denmark's forests attains 90 cubic feet, despite the fact that soil and climate are less favorable to tree growth.

FOREST & OUTDOORS, April 1947

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"Mill Village", drawn by A. J. Casson, R.C.A., from his original painting for the pulp and paper industry.

SMALL AND LARGE

Pulp and paper operations are truly representative of Canadian life. Some of our paper companies are among the largest of their kind. Other companies are small: single mills, with one or two machines, around which a community has grown. The mills stretch across Canada, 109 of them, in six provinces, from the coast of Nova Scotia to the shores of the Pacific.

Added together these 109 mills make a great industry, the largest manufacturing enterprise in Canada and one of the great industries of the world. In Canadian production pulp and paper heads the list, exceeding the value of wheat, gold, automobiles or

any other commodity. In export trade pulp and paper again comes first and accounts for about one-fifth of the Canadian total. In Canadian employment, pulp and paper provides more jobs than any other manufacturing industry.

And this is an enterprising industry. Pulp and paper companies, both small and large, are pressing constantly towards new horizons of production, of forest management, of research. In its progressive outlook and in its effect throughout the country, this industry is the spearhead of Canada's world trade, a corner-stone of our national economy.

PULP & PAPER INDUSTRY OF CANADA

109 mills, small and large, from coast to coast.

"Hearts of Oak"

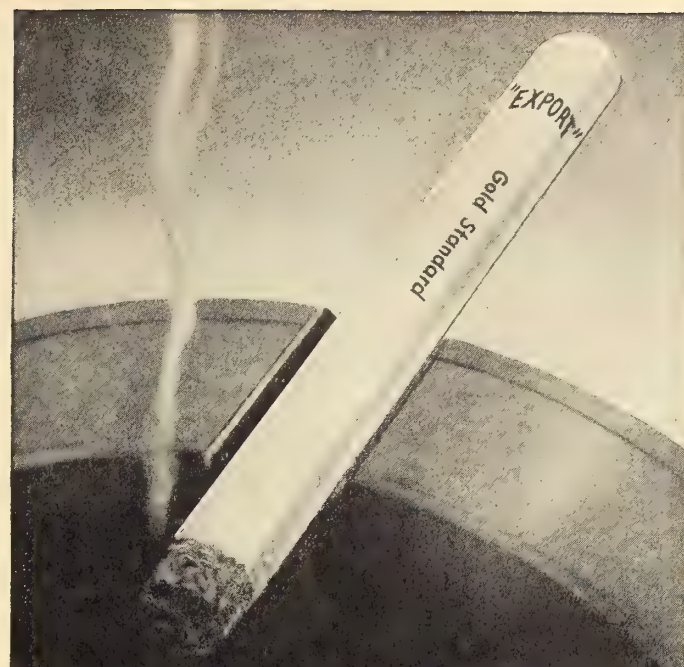
(Continued from page 103)

edible. There is an European proverb that "Acorns were good until bread was found". In this regard it is interesting to note that in Great Britain the year 1116, like 1947, was reckoned "A very heavy-timed, vexatious year", in which the hungry inhabitants were obliged to resort to the fruit of the oak in order to sustain life. On a steady diet of acorn bannock their digestive organs must assuredly have been well tanned.

The only other variety of oak native to western Canada is the Bur Oak or, as it is commonly called, Scrub Oak. West of the Great Lakes this tree is today of little value except as firewood but at one time it was almost vital to transportation on prairie trails. From oaks which grew on the banks of the Assiniboine river and in the Brandon hills those historical chariots, the Red River carts were partly built, — the chassis might have been elm or even poplar but the running gear was certainly oak. In their construction the wheelrights of by-gone Fort Garry used no iron — the axles and wheels of the vehicles being formed solely of wood, and strips of shaganappi, a binder made from raw buffalo hide. When the Earl of Southesk, the first tourist to visit the Canadian Rockies, traveled across the western plains in the summer of 1859 he was amazed by the celerity with which his men replaced a broken axle on one of the carts. Felling a small oak tree these handy men, with no tool other than an axe, fashioned a new axle in quick time and presently the caravan was once again trundling over the prairie sod. There was then no market for axle grease in Manitoba. With wooden hubs revolving around wooden axles amid the dust of midsummer travel the use of grease as lubricant would simply have collected grit between oaken nave and axle. Thus the passage of a distant train of ox carts was made manifest by the strident noise from squealing creaking wheels. While on the subject of Red River and the Fort of Nicholas Garry it might be pertinent to point out that near the ancient stone bastion beside the river stands one of the earliest historical monuments in the west — that which commemorates the battle of Seven Oaks, fought on June 19th 1816.

The oaks of eastern Canada are largely confined to south-western Ontario and to a small area of Quebec. One variety, the Northern Red Oak, is found in Nova Scotia and New Brunswick. The White or Stave Oak, common in southern Quebec and Ontario, is most valuable tree of the species in this country. The wood is in demand for flooring and for the manufacture of furniture. At one time the bark was freely used in the tanning of leather but has long since been supplanted by a modern chemical process.

The oak figures prominently in the history of mankind, one of the earliest references to the tree being contained in the amazing biblical story of the untimely end of Absalom. Perhaps the most famous oak in England was the one in which Charles the Second found covert when certain of his disgruntled subjects would fain have shed his



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blood. This royal roost, swathed in ivy, did not long survive. It was carried away piecemeal by souvenir hunters. Nevertheless the date of May 29th is still observed in England as Oak Apple Day in commemoration of the lucky escape of the hunted monarch.

John Evelyn, who lived in the reign of King Charles and who was foremost authority on forestry in that age, believed that it was unlucky to cut down any celebrated tree. In his diary he tells of two men who cut down the Vicar's Oak in Surrey; soon after one lost an eye and the other broke his leg. Evelyn's life-long friend Samuel Pepys, when Secretary to the Admiralty, got into a serious log jam by his zeal in procuring timber for ship-building. Upon his orders a splendid stand of oak was expropriated and speedily felled whereupon it was revealed that the late owner of the trees had not even been notified and that he was none other than Samuels superior in office. The subsequent depth charge well nigh scuttled the Navy Office.

It is doubtful if there is another wood the equal of oak in durability. Several of the solid oak doors

in Westminster Abbey are said to have been first hung when the building was erected. If so they must be almost thirteen hundred years old. These venerable doors had swung on their massive hinges for five centuries before Richard (the First) passed through their portals on his way to the throne. If the round table of Arthur and his Knights survived the blitz and the recent fuel famine that singularly durable piece of antique oak furniture may still be on display at Winchester. It must have been cut from a tree at least eighteen feet in diameter and, shocking as it may seem, was on the occasion used as a target by the soldiers of Cromwell.

Compared with the firs, the spruces and the cedars — with the elms, the ash and the maples, the native oaks of Canada are relatively unimportant. If the wood had been suitable for hockey sticks, golf clubs, skis and fishing rods we should doubtless pay high tribute to these hardy and sturdy trees. Nevertheless one is glad to point out that the oak tree, converted into casks for spirituous beverages, contributes something to the joy of life. Fashioned into cradles and caskets it neatly spans the period of our earthly pilgrimage.

“MYRIAD GEESE” (con't from page 108)

The whole population of the Post was out to see us, and of course the Factor, Mr. Michell, was on hand to greet us. Archie Michell has been brought up with the Hudson Bay Co. around the Bay and, of course, knows the history and business aspects thoroughly. He resides at Ruperts House with his wife and two young daughters, and seldom gets out to see the city life of Montreal or Toronto. He, however, is most at home and happy where he is. Mrs. Michell provided a lunch for us at her home, and the meat course was goose — just what we were looking for!

At the post a monument with a plaque indicated that the explorers for the Hudson's Bay Co. had been there in 1668. During the passing years the Indians took a heavy toll of the beavers which were their staple food and money produce. So scarce were beaver during the 20's that starvation faced the 80 to 100 families of Indians about the Post. The then factor for the Company arranged a lease with the Province of Quebec, licensing several hundred square miles which were turned into a beaver reserve. Now each family is allowed to take 20 beavers annually, and each has his own area staked out for trap lines — so there is no over-lapping. Foxes, muskrats, are quite plentiful, but the winter catches include otter, fish, marten, mink. The real crop, however, is the beaver. On the reserve the company locates each beaver house and estimates the probable number of animals in each. With these records marked on a map the Indian hunters are given their sections.

All the Indians around the Post were Crees, though most of the families had left for the hunting grounds. The families still live under very primitive conditions and have no permanent homes. Their quarters are a single or a combination of two canvas tents. All of them, however, seemed to be well fed and well clothed.

Presently there is being built for the Indians a

huge community hall — mostly from funds of their own, though organized by Mrs. Watt, wife of the former factor. This building is to contain a dance hall, children's playrooms and shower baths; and is to be a memorial to Mr. Watt in recognition of his work in establishing reserves for beaver and thus a permanent livelihood from this source for the Indians.

Other than the Company storehouses and factor's residence, there is an Episcopal Church, school and residence for the Minister and his family. At the other end of town is a Catholic Church, attended by a priest and his assistant. These four, plus the factor and his family are the only whites at the Post. There are other Posts on the Bay, but all are many miles apart and travel by canoe or boat is not only slow, but the only means of transport during the summertime. Of course all Indian families have numerous dogs which are a necessity in wintertimes when they visit their traplines or move their families.

Arrangements had been made with Michell to supply a boat and guides, which were all ready for us. Having lunched well, we decided to pack our equipment aboard the “Jacqueline” and get away to the hunting grounds, known as Cabbage Willows. The two Indians, one Kenneth Etherington, who spoke some English, and who operated the motor boat, the other Malcom Whiskyjack, were not guides, but first class hunters who knew their stuff and paid little attention to us. True, they showed us the hunting grounds and how to hunt — but then they were off across the marshes for some better place for themselves, returning when they had secured a substantial meat quota.

The trip from the Post to Cabbage Willows was supposed to take only four hours, but halfway across we encountered heavy tides and a real gale from the north which not only held us up for a couple of hours, but actually pushed us backward.

(Concluded on page 126)

CHOOSE NOW! For Wildlife or the Juke-Box

PROBABLY a good many of you feel that when the fish have all gone, and the game, a tremendous number of tourists will still come to the Kawarthas for the sheer peace and beauty of the country. There are, let us admit, very large numbers of tourists who just like to go places.

As the fish go, the juke box comes in. When the drumming of the partridge dies away, the drumming of the fast motor boat wells up. And strange as it may seem, when the juke box comes in, the ten dollar tourist makes way politely, for the fifty-cent tourist. You know that. You can see it everywhere.

Right here in Peterborough are old men who, in their childhood and early youth, have eaten passenger pigeon. Maybe they even remember killing them. Your famous Peterborough pioneer, Susannah Moodie, in her book "Roughing It In The Bush," describes those swift moving clouds that would appear, far off, low down, in the late March or early April sky. Strange, exhilarating even terrifying clouds that grew and grew, as the millions of passenger arrived in Canada.

From the voluminous sportsman's library of my brother, Gregory Clark, I've got here some particulars about the passenger pigeon which are likely well known to most of us, but which can never be too often told in Canada.

A hundred years ago, the great Audubon witnessed a flight of passenger pigeons, forty miles wide, **three days long**, and the birds were in tiers of forty pigeons deep, one above the other. He estimated, by mathematics, that the **one** flight of passenger pigeons he saw contained **one thousand million** birds.

It was **only one** of the great flocks that moved in spring and fall all over America from the Atlantic coast to the edge of the prairies. Audubon gave it as his opinion that despite the shocking slaughter of the pigeons he witnessed, a hundred years and more ago, they could **never** be seriously reduced in number let alone ex-

From an address by Joseph W. G. Clark, Executive Assistant to the President, Investment Dealers Association of Canada to the Peterborough Sales and Advertising Club.

terminated. Nature, he said, is so lavish, so recuperative.

By the year 1870, there were in the United States over 5,000 professional pigeoners operating. They followed the passenger pigeons to their nesting sites from Virginia to Michigan and right up here into Canada, into Huron and Simcoe counties and into Peterborough county. Professionally, with nets, with guns, poles, they slaughtered the pigeons by the millions. The markets in New York, Boston, Chicago and many other cities could not get enough of the succulent squabs as well as the mature pigeons shipped in long trains of iced railway cars,

in salted barrels and in every other shape and form.

The last great shipment by these professional nomadic pigeoners was from Petoskey, Michigan, in the year 1878. It is on record at the University of Chicago that they shipped one million, five hundred thousand birds, not to mention 80,000 live birds they shipped in crates to the gun clubs of America for the live bird shooting.

Easy money! Good eating! Sport! What more can any man want?

Audubon was wrong about Nature. Nature isn't as recuperative as he thought. After years and years of ruthless and greedy persecution the last blow at Petoskey Michigan seems to have been the fatal blow.

In the 1880's, everybody noticed there were no more strange clouds low down on the horizon in the

(Concluded on page 124)

IN EVERY CORNER OF THE WORLD



Player's Please

CORK TIP and PLAIN

PLAYER'S NAVY CUT CIGARETTES

"Wet" Water for Fighting Fires

*By courtesy of The Reader's Digest
Condensed from National Safety News*

PAUL W. KEARNEY

LAST August a fire started in 90 tons of hay in a barn at Lebanon, Conn. In such fires, since burning hay is practically impossible to handle, the barn usually burns to the ground. But this fire was extinguished by Connecticut Forest Ranger Clark W. Standish and Lebanon volunteers with no more structural damage than the removal of a few boards from a wall.

The explanation is "wet" water — the newest advance in fire fighting, which promises (1) faster stops in many fires with much less water damage; (2) stops made of hitherto hopeless outbreaks; (3) great savings in manpower by minimizing overhaul, patrol work in brush fires, and the dreaded rekindle.

In rural areas where water supply is scanty the development of water fog or spray has been a boon because it puts out a fire with half the volume of water used by a solid stream. Now wet water doubles or trebles the efficiency of fog.

Wet water is water to which a chemical wetting agent is added to increase the penetrating action. Thus, when Ranger Standish arrived at the barn fire, 90 percent

of the straight stream being employed bounced ineffectually off the burning hay. So a fog nozzle was introduced through an opening just above the mow and wet water applied from a booster tank.

"In less than five minutes," says Standish, "water was trickling from the bottom of the mow; the 12-foot pile of hay was completely saturated — and the fire was out."

A wetting agent increases the saturating action of water by reducing the surface tension which tends to keep water in globular droplets when sprinkled on any surface. Put some water on a piece of paper from an eye-dropper; the individual drops retain their spherical form. Add a wetting agent and the drops instantly spread out and soak into the paper.

Four years ago a New Haven scrap-paper concern had a bad fire involving tons of baled waste-paper. After several hours' tussle, the flames were quenched. Then for another eight hours firemen sweated in those dripping ruins, breaking open paper bales, dous-

ing the skulking fire still hidden in most of them.

This "overhaul" accounts for two thirds of the fireman's work. And as those firemen were, there were six re-calls to that warehouse in the following week for rekindles.

A few months ago another bad fire in this same establishment was dispatched in about the same time as the first. But this time there was no tedious overhaul; no subsequent recalls. On this fire, Chief Paul Heinz used wet water.

I arrived in Coventry, R.I., just a few hours after a threatening blaze in a planning mill had been stopped with miraculous speed. The mill was a frame building. The main floor was stacked with lumber; the open-end basement filled with wood shavings to a height of seven feet. The fire, which had started when a workman was priming a gasoline engine, flashed down through the loose floor planking into the mountain of perfect fuel below, where it was fanned by a brisk breeze.

Among those responding to the alarm was Warden J. R. Hill, of Coventry, with 650 gallons of wet water in the booster tank of his
(Concluded on page 124)

New Brunswick Organizes a Get-Together

More than 250 delegates attended a provincial conference of the Canadian Forestry Association at Fredericton, on March 19th. Lively discussions of the New Brunswick forest problem were given close attention. T. C. MacNabb officiated as chairman, and the speakers' list included Hon. R. J. Gill, Minister of Lands and Mines, Vernon Johnson, vice-president and woodlands manager of Canadian International Paper Co. and chairman-of-the-Board, Canadian Forestry Association, Robson Black, president of the Canadian Forestry Association, K. B. Brown, director of the Photogrammetry division of Department of Lands and Mines, and D. W. Hudson, district forester, New Glasgow, N.S.

The election of officers resulted in the appointment of Hon. R. J. Gill as honorary-president, J. D. Hickman, president, J. P. Johnson, vice-pres-

ident, and Nelson Adams as secretary.

On the evening of the 19th, under auspices of the Minister of Lands and Mines, a banquet was held at which Major-General Howard Kennedy, Chairman of the Ontario Royal Commission on Forestry was the guest speaker.

The Department of Lands and Mines of New Brunswick merits high praise for their achievement in organizing a forestry conference of such representatives proportions. Intimate association and continuous discussion as between county councillors, Forest Service officers, representatives of industry, the staff of the Faculty of Forestry, and many other groups has been productive of wider understanding and has kindled a new cooperative interest in solving the complex problems of forestry.

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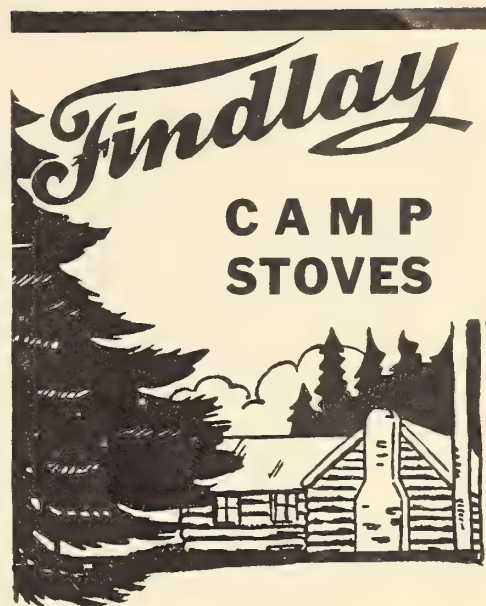
Sitting for hours in the shade of an apple tree, near the garden-hives, and under the aerial thoroughfares of those honey-merchants — sometimes when the noonday heat is loud with their minute industry, or when they fall in crowds out of the late sun to their night-long labors—I have sought instruction from the Bees and tried to appropriate to myself the old industrious lesson.

And yet, hang it all, who by rights should be the teacher and who the learners? For those peevish, overtoiled utilitarian insects, was there no lesson to be derived from the spectacle of Me? Gazing out at me with composite eyes from their joyless factories, might they not learn at last — could I not finally teach them — a wiser and more generous-hearted way to improve the shining hours? Logan, Pearsall Smith, in "All Trivia.")

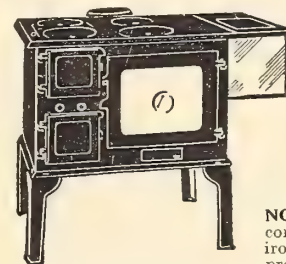
LATIN AMERICA RAMPANT WITH EXPLOITERS

Latin America is, for the most part, in the purely exploitative stage of development that characterized the United States fifty years ago. Lumbering is carried out with no responsibility toward the nation or the future. Soil erosion is rampant in most countries and in none of them are adequate measures being taken to control it. Water-tables are falling over vast areas while, at the same time, the respective nations are being encouraged to industrialize — and make greater demands upon their waters. Rivers that were formerly great potential resources have been converted into liabilities; through up-stream deforestation they have been turned into dangerous floods part of the year, miserable trickles the rest.

As a result of all this, there is every year less and less suitable land for wildlife—including birds. The fact that there is also less and less land suitable for human beings gives us grim encouragement. What national leaders might not do in defense of the birds, they must do in defense of human beings, if most of Latin America is not to be devastated. (From International Committee for Bird Preservation)

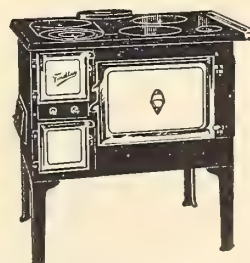


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"CHOOSE NOW"

(Concluded from page 121)

April Sky, coming like a tornado. By the latter part of the 1880's, the appearance of a small, flock of fifty somewhere in the backwoods was news for the papers. In the 1890's the appearance of a nesting pair anywhere was a headline. The last recorded passenger pigeon in Canada was at Penetang in the year 1902.

The last passenger pigeon on earth — and she was called Martha — died at the age of twenty-four in the Cincinnati zoo on September 1, 1914.

How terrible, we all say.

But there is not a province, a city, a town, a county in this country that is not, in the name

of the tourist trade, doing exactly the same thing today to the fish and game that remains — for exactly the same reasons and from the identical motives that destroyed the passenger pigeon.

Sell 'em! Sell 'em! F O R M-O-N-E-Y!

Gentlemen: a tidal wave of tourists now hangs suspended over Canada, ready to fall on us. We have no proper accommodation for them. But that is nothing. We have not a plan or a policy anywhere in the country for the preservation — for the rescue — of the priceless wild life resources still left.

Who's going to do it, before it's too late?

I have a queer feeling that

Lovers of fishing make the best class of tourists. As Mr. Clark's article warns: "As the fish go, the juke box comes in. The ten dollar tourist makes way for the fifty cent tourist".

when man has demonstrated to the Almighty that he is no longer capable of protecting and conserving the wildlife of the earth — the gentle, beautiful creatures of our lakes and forests — then he has signalled for his own extinction.

"WET WATER"

(Concluded from page 122)

pumper. Warden Hill had two openings made in the floor and inserted his fog nozzles. At the same time he ordered a 2½-inch reserve line connected to the nearest hydrant, 1200 feet away. But by the time his men had returned from making their hydrant connection, the fire was out! Later examination showed that the entire pile was completely drenched and that the water had penetrated two inches into the earth beneath.

Wetting agents were developed originally for the textile industry to make bleaching or dyeing solutions penetrate fabrics thoroughly and evenly. Several hundred formulas are now on the market. Not all are suitable for fighting fire but about 30 tested so far show promise. The first outfit to concentrate on the fire market is Arnold, Hoffman & Co., of Providence, with its Drench, which went on the market commercially last November. The present price — which will come down with increased production — is \$2.50 per gallon in 55-gallon drums.

A big fire still calls for a great volume of water with plenty of punch behind it. But for most fires wet water and small lines are adequate.

THE PUBLIC SERVICE OF CANADA

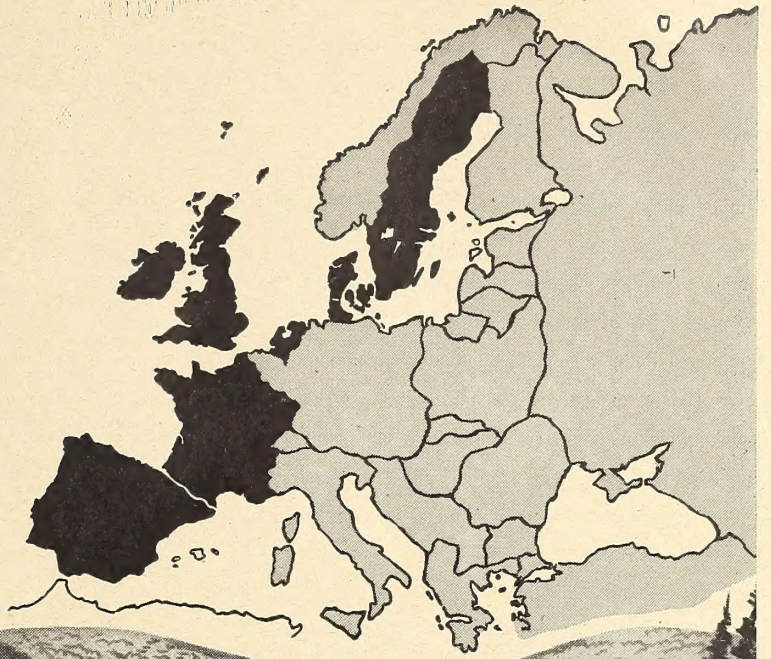
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DIVISION, \$4,200-\$4,800, Department of Mines and Resources,
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FOREST RESOURCES
to Stagger the Imagination

"The figures of Canada's forest resources stagger the imagination. Only two other countries, Russia and Brazil, have greater forested areas. Canada's total is about 1¼ million square miles. The productive area, 770,000 square miles, is about equal to the combined areas of the British Isles, France, Spain, Portugal, the Netherlands, Denmark and Sweden."

—Excerpt from a Monthly Letter of The Royal Bank of Canada

The Royal Bank assists in the financial operations necessary to convert Canada's vast forest resources into pulp and paper, lumber, and many other products for domestic use and for export.

THE ROYAL BANK OF CANADA

ASSETS EXCEED \$2,130,000,000

MYRIAD GEESE" (concluded from page 120)

Nightfall found us still bucking the tide, though we finally made the entrance to the river and then all was smooth sailing.

Next morning we were up early, and after putting away a good breakfast we followed the Indians across the muskeg, through the willow groves, to a location which seemed to be the line of flight of the geese. Decoys were made of white rags or a handkerchief tied around a small willow bush (this bush cut and placed at such an angle to look like the body of a goose.)

Hardly had three decoys been placed when we saw coming over the willows, about half a mile away, about fifteen geese — heading directly for us. Suspense was supreme — only the Indians and I had ever shot a goose, but everyone stayed quietly behind a clump of willows while a few calls from the Indians brought the birds directly overhead, barely 75 feet away. Everyone was ready and took a toll of this flock. The Indians, however, went off to select a spot for themselves, but we stayed at the blinds and frequently had shots at geese passing over. About an hour after we were set up, a flock of twenty came along and set their wings for a landing, ending up in the grass about 100 ft. from us. Everyone was keenly interested in watching them, and, as always, there would be one to three white heads sticking up above the grass. Ronnie Jacques, the photographer in the party, was trying to get a picture of them, but never did they show up clearly enough to produce a good picture. By this time we had seen hundreds or perhaps thousands of geese pass along their flyways; we had also practised calling, but with little satisfaction. It was soon demonstrated that the Indians could call all singles or doubles and turn many larger flocks our way. So far all of the birds which we had seen were the blue geese — with the occasional white wavey. It was amusing to learn that Ronnie had not taken any shots of the first flock — he said he didn't know what was going to happen. There were birds falling — the four of us accounting for eight.

By eleven o'clock we were back at camp; tired out from slugging across the meadows — each of us carrying four or five geese. After getting a lunch we started out in another direction to explore the ground for the following day.

The number of hawks and small owls was very noticeable — they undoubtedly found the odd crippled goose or duck, and would have no trouble getting enough to eat of the various birds or the animal life, though we did see tracks that the Indians said were moose.

During the afternoon the occasional duck or goose was picked off by the party; mostly from the birds which happened to pass overhead. One Canada goose was shot and this proved to be the only chance on the trip to secure one of these birds. In exploring for the morrow's hunt we really located the birds — geese, ducks and shore birds.

Everyone was so tired by four o'clock that we put into camp for supper and an early to bed.

Since all were so tired, no one was up before day-

light, and anyway we knew that it wouldn't take long to shoot our daily bag limit of birds, so there was no hurry. After a substantial breakfast we set out by canoe up the waterways leading to the central marsh. On reaching the marshes ducks arose by the thousands — flocks of one to five hundreds teal seemed common, and pintails and blacks were jumping from the water by hundreds. Soon, however, we reached the geese — a few hundred to a thousand would rise at a time — this procedure continuing for miles. The clamor of honking geese was loud and vociferous. They told us in no uncertain terms to leave them alone.

A lone goose or small flocks were easy victims for the Indians. As we got out of our canoe a lone bluegoose was passing, and a few calls from the Indian hunter turned him and in a few seconds he was circling within range of our guns.

As usual the Indians set off across the mud flats at a dogtrot, expecting us to follow but we could see no reason for going further afield when there were plenty of birds where we were. Without using blinds, simply sitting quietly in the grass which averaged eighteen to twenty inches, numerous geese and ducks passed within gunshot.

Careful hunters such as the Indians intent on getting their meat could easily bag as many as they could carry. Our interest was to watch the bird life, and all of us were fascinated by the countless numbers of small birds — finches, marsh sparrows, ranging in size to sandpipers, snipe, plovers, ducks, hawks and geese. There is no more fascinating sight than a flock of geese flying in its varied V formation, noisily going from one feeding spot to another.

In spite of the possibilities of air travel it does not seem reasonable to me to expect that Ruperts Bay or Hudson's Bay will ever become a much — frequented hunting ground. It is true that the birds are plentiful, but presently there are no outfitters except at Moosonee, and the distances are so great that only a few of the birds can be brought out. Thus, whereas there may be a fair amount of hunting, the toll of birds cannot be excessive, and I would expect that this area would remain pretty much of a paradise for birds for many years. In addition to this the Provincial Government have established a reserve, and this alone should go a long way toward providing a safe resting place for the birds on their way south.

Personal Income Tax in Sweden

An example:—

An individual owns \$28,500 of shares in a Swedish forest industry, which returns a 4% dividend of \$1,140.00. His salaried income is \$14,250.00 —

Total income, salary and dividends..... \$15,390.00

Rate of taxation: 38%..... 5,848.20

Special tax on ownership of shares above

20,000 Kroner..... 45.60

Total personal taxes..... \$5,893.80

Where do we *WANT* to go from here?



We in Canada have now come through the hardest
part of the post-war adjustment period. By buying
in moderation only what we really needed, by resisting the
natural desire to rush madly after long-absent luxuries,
we have been able to keep prices at reasonable levels.
We have been able—so far—to escape the strife and the uselessness of inflation.
Knowing *where* we want to go, we have also known *how* to get there.
Credit for this lies with the foresighted
planning of our Government—the wisdom of the people—
and the Canadian habit of moderation in all things,
which as The House of Seagram has long maintained,
is unquestionably one of this country's finest assets.

Men who Think of Tomorrow



Practice Moderation Today!

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† *Nature Unspoiled*

**YOURS TO ENJOY
YOURS TO PROTECT**



"CANADA GEESE" by T. M. Shortt, Ornithologist.

The above illustration shows Canada Geese in flight.



THE GUIDE

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The guide helps the cause of conservation by setting an example in obeying the game and forest laws—the laws of Nature and of Man.

Winging its way northward to the land of its birth, the Canada Goose presents a picture of strength and endurance. We can help the geese on their exhausting journeys by providing sanctuaries along the way, and by conscientiously observing the game laws.

* "The conservation of nature implies simply the wise use of our natural resources. Only in this way can we pass on to our successors any semblance of unspoiled nature."

* An excerpt from "CONSERVATION and CANADA'S MIGRATORY WATER-FOWL" by J. L. Baillie, Jr., one in a series of pamphlets published by The Carling Conservation Club.

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